CLAIMS

1. A control system for a legged mobile robot comprising a base body, a plurality of link mechanisms that are connected to the base body to move the base body and that come in contact with externals, and a plurality of joints provided between the base body and the distal portions of the link mechanisms to make the distal portions of the link mechanisms movable with respect to the base body, the legged mobile robot being able to be operated to a specific motion posture in which the robot is in contact with an external at a predetermined portion or portions between the distal portion or portions of one or more specific link mechanisms among the plurality of link mechanisms and the base body,

the control system, comprising:

an external force detecting means for detecting or estimating an external force acting on the predetermined portion in the specific motion posture;

a desired external force determining means for determining a desired external force, which is a desired value of the external force on the predetermined portion in the specific motion posture; and

a joint controlling means for controlling the displacement of at least a joint existing between the predetermined portion and the base body such that the detected or estimated external force approximates the desired external force.

2. The control system for a mobile robot according to Claim 1, wherein the specific link mechanisms are leg bodies.

3. The control system for a mobile robot according to Claim 1, wherein the specific link mechanisms are leg bodies extended from buttocks connected to the base body through the intermediary of joints, and the predetermined portion is the buttocks.

4. The control system for a mobile robot according to Claim 1, comprising an actual posture detecting means for detecting the actual posture of a second predetermined portion, such as the base body, of the mobile robot, and a desired motion determining means for determining a desired posture of the second predetermined portion, wherein the desired external force determining means determines the desired external force on the basis of at least the difference between the actual posture and the desired posture of the second predetermined portion.

5. The control system for a mobile robot according to Claim 1, comprising an actual posture detecting means for detecting an actual posture of a second predetermined portion, such as the base body, of the mobile robot, and a desired motion determining means for determining the desired posture of the second predetermined portion, wherein the joint controlling means comprises a means for determining the manipulated variable of an external force on the basis of the difference between the actual posture

and the desired posture of the second predetermined portion, and the displacement of the joint is controlled such that the detected or estimated external force approximates the resultant force of the desired external force and the manipulated variable of the external force.